



THE SOURCE



NEWSLETTER OF THE NHDES DRINKING WATER SOURCE PROTECTION PROGRAM
ON THE WEB AT WWW.DES.NH.GOV/DWSPP

WINTER 2006

Source Protection Highlights from 2005

This article is the annual report of the Drinking Water Source Protection Program (DWSPP). It provides an overview of the services the program provides as well as the program's accomplishments.

One of the broadest measures of DWSPP's success is the percentage of community and non-transient, non-community water supply sources with local source water protection programs in place. That's in addition to DES's statewide programs in areas such as underground storage tanks, hazardous waste, shoreland protection, and erosion and sedimentation control. Our goal is 90 percent of sources under local protection. At the end of September 2005, we could identify 82.5 percent of sources with local protection programs.

Other program highlights during the past year:

- The annual source water protection workshop was a huge success; attendance more than doubled over previous years to 150.
- Funding and staffing were restored to the Water Supply Land Grant Program. Since the inception of the program in 2000, the program has invested \$3.75 million from state funds, matched three-to-one by local funds and in-kind value, to protect a total of 3,364 acres. Projects involving another \$587,000 in grants are expected to close by spring 2006, and an additional \$2.2 million is available for grants through 2007.

In addition, program staff have:

- Worked with stakeholders and adopted the state's first water conservation regulations.
- Coordinated a voluntary statewide drinking water sampling program for perchlorate, an emerging contaminant of concern.
- Conducted site inspections of all salvage yards in New Hampshire that have not completed

DES's certification program, in a joint effort with DES's Waste Division.

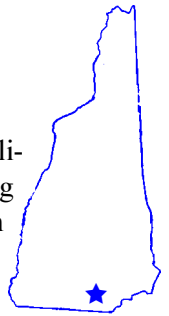
- Protected water users by ensuring that no large groundwater withdrawal that has been developed since 1998 has caused an unmitigated adverse impact to the environment or other water users.
- Developed a policy for managing and disposing of waste derived from arsenic and radionuclide water treatment processes.
- Developed a guidance document for using wastewater to recharge aquifers or for irrigation at golf courses.
- Continued to protect groundwater through groundwater discharge permitting and registration. The program has also worked extensively with several municipal systems to solve current and long-range wastewater disposal challenges.
- Continued to provide on-site training to municipal employees to conduct inspections and enforce best management practice regulations for handling and storing regulated substances.
- Worked with legislative commissions and committees on a broad range of water management issues, including the passage of legislation that requires DES to adopt and enforce rules for water use registration and reporting.
- Ensured that all new sources of water for community water systems have delineated well-head protection areas and have implemented source water protection programs.
- Awarded 17 Local Source Water Protection Grants for a total of \$182,779.

Highlights continued on page 4



Spotlight on ... Pennichuck Brook Watershed

By Rebecca Balke, P.E., Comprehensive Environmental, Inc.



During the summer of 2005, Pennichuck Water Works contractors tore up portions of the parking lot at Pennichuck Square, a small shopping center at the corner of Route 101A and Continental Boulevard in Merrimack. With the aim of reducing runoff from the site to adjacent Pennichuck Brook

by as much as 80 percent, the project redirected stormwater to porous pavement and on-site rain gardens designed to treat the stormwater and infiltrate it into the ground. Pennichuck Brook is the primary source of water supply for the

Nashua area as provided by Pennichuck Water Works (PWW). PWW hopes this highly visible demonstration project will increase the adoption of low-impact development techniques (LID) elsewhere in the watershed, which includes portions of Amherst, Hollis, Merrimack, Milford and Nashua.

What if projects like the Pennichuck Square redevelopment project were done on a widespread basis within the Pennichuck Brook watershed? What would the impact on water quality be? PWW intends to answer these and many other questions through the use of a computer model that mimics the behavior of the brook and its tributaries. The model is being developed by Comprehensive Environmental Inc. (CEI) of Merrimack under a grant from DES.

Modeling will use updated phosphorus loadings in a Total Maximum Daily Load (TMDL)

approach. The model will be calibrated to include all of the existing watershed controls, based on monitoring of these controls along with tributary flows, by the Nashua Regional Planning Commission (NRPC) and CEI. In addition to the physical data collection of water samples by NRPC, CEI has installed automated dataloggers that collect information on baseflow and stormwater inputs to the watershed.

Once calibrated to existing conditions, the model will be used to evaluate various scenarios of improvements and to identify where additional improvements are needed. PWW's existing 10-year watershed plan will be evaluated for effectiveness and adjustments, if needed, will be recommended. This will be the first time anywhere in the state that so much data has been compiled and used in a sophisticated model to evaluate watershed protection measures for a water supply.

For more information about the modeling study or the Pennichuck Square stormwater retrofit, contact Donald Ware, Senior Vice President – Operations, Pennichuck Water Works, at (603) 913-2330 or donald.ware@pennichuck.com.

Guest Articles in *The Source*

Don't forget! The Drinking Water Source Protection Program invites outside authors to submit source protection articles for this newsletter. To view our "Guidelines for Guest Articles" visit www.des.nh.gov/dwspp/Source/Guidelines.pdf.

Supply Lines is Back!

Supply Lines, the newsletter of the Water Supply Engineering Bureau, has come back to life! To subscribe to the newsletter, please contact Jessica Brock at (603) 271-4071 or jbrock@des.state.nh.us or visit www.des.nh.gov/wseb/supply_lines/index.htm.

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The 2005 SWP Winner is ...

DES has presented its first Source Water Protection Award to the [Waukegan Watershed Advisory Committee](#), the [Town of Meredith](#), and [Jennifer O. Palmiotto of New Hampshire Rural Water Association](#). The recipients were chosen because the DES Drinking Water Source Protection Program considered the *Management Plan for the Waukegan Watershed*, completed earlier this year, to be unequalled among water supply source protection plans in New Hampshire in terms of its thoroughness, technical quality, and the participatory process by which it was developed. According to DES Water Division Director Harry T. Stewart, "The document is a testament to the dedication and hard work of the participants, and serves as a model of what can be accomplished when a forward-thinking water supplier invests the time to work with town officials and other important stakeholders, with the help of a highly competent consultant committed to a participatory approach to source water protection."

The award was presented by State Senator Carl Johnson of Meredith in a ceremony at the annual meeting of the New Hampshire Water Works Association in November.

Notably, all five watershed towns – Ashland, Center Harbor, Holderness, Meredith, and New Hampton – named representatives who participated fully in the advisory committee. In forming the committee, the participants also took the effort to ensure the representation of shoreland owners and other recreational interests. The committee continues to work on implementation of the plan. To download a copy of the plan visit www.des.nh.gov/dwspp/nh_source.htm.

Southern New Hampshire Water Supply Task Force to be Re-Established

On October 12, over 70 people attended a water forum sponsored by the Southern and Nashua Regional Planning Commissions. In the late 1980s, a Water Supply Task Force consisting of four regional planning commissions, state agencies, community representatives, and representatives of business and industry collaborated to develop a study that was issued in 1990 titled *Water Supply Study for Southern New Hampshire*. The report offered a number of recommendations pertaining to the management and protection of water resources. Many of these recommendations were implemented over the last 15 years and have helped ensure that southern New Hampshire has an adequate quality and quantity of water to support its development. (Visit www.snhpc.org/pg%20pdfs/Water%20Study%20Final.pdf for an update of the 1990 report that has been prepared by the Southern New Hampshire Regional Planning Commission).

In January, the Southern, Nashua, Rockingham, and Strafford Regional Planning Commissions intend to reconvene the Water Supply Task Force to facilitate and coordinate the future planning and protection of southern New Hampshire's water supply. For more information regarding the Water Supply Task Force, contact David Preece, Executive Director of the Southern New Hampshire Planning Commission, at (603) 669-4664 or dpreece@snhpc.org

Protecting Wells from Floods

The vulnerability of a well to contamination by flood waters depends partly on the well's age and depth. Wells over 50 years old and less than 50 feet deep are more likely to be contaminated by flood waters. Flood waters often carry hazardous and toxic materials, including raw sewage, animal wastes, oil, gasoline, solvents, and chemicals such as pesticides and fertilizer. Flood water that enters a well can contaminate the groundwater and make the well water unsafe to drink. The effects may last long after the flood waters have receded.

Locating new wells outside of Federal Emergency Management Agency (FEMA) defined flood zones will reduce potential contamination from flooding. Also, proper well construction will help protect against flood water contamination, including:

- Extending the well casing at least two feet above the highest known flood elevation.
- Installing a sanitary seal or cover on the casing.
- Curbing the casing at ground level by surrounding it with a water tight seal that is at least four inches thick and that extends at least two feet in all directions.
- Placing grout between the casing and the sides of the bore hole to a depth of at least two feet.
- Installing a backflow valve in the water line.
- Protecting electrical controls from flood water.
- Drilling a new well on higher ground, above expected flood levels and known sources of pollution.

If you have any questions regarding the potential impact of flooding upon wells in your community, please contact Bernie Lucy at (603) 271-2952 or at blucey@des.state.nh.us.

This article is based upon information within FEMA Publication how2026.txt located at www.fema.gov/txt/fima/how2026.txt.

- Worked with surface water-based systems to draft amendments to the water supply watershed protection rules (Env-Ws 386).
- Increased the number of New Hampshire Project WET (Water Education for Teachers) trained educators to 1,095.
- Worked directly with a number of communities, including Belmont/Northfield/Tilton, Dover, Haverhill, Hooksett and Rindge to develop local groundwater protection programs.

In the coming year, DWSPP plans to get a better statewide picture of local protection programs. To this end, we have partnered with the New Hampshire Office of Energy and Planning and the national Ground Water Protection Council to gather data on local ordinances that contribute to source protection. This includes local aquifer protection, groundwater protection, and shoreland protection ordinances. Results should be available by spring 2006.

We also intend to support the legislative commission studying issues pertaining to groundwater management, as well as a statutory committee that is developing a state plan for water resource management. We will also start the process for re-adopting rules for groundwater reclassification, developing new community water sources, groundwater discharges, and water use registration and reporting. All of the rulemaking processes will include meetings with stakeholders to provide DES

with advice and suggestions prior to initiating the formal rulemaking process.

We are also setting our sights on boosting the percentage of sources with local protection by encouraging town-wide and regional programs where system-specific programs are lacking. We are reaching out to regional planning commissions and have made changes to the Local Source Water Protection Grant Program to make town-wide and regional projects more competitive in the scoring process. In a related area, to provide examples of successful local and regional source water protection efforts in New Hampshire, DWSPP is building an online library of source water protection plans and similar documents on our website at www.des.nh.gov/dwspp/nh_source.htm.

Finally, we have renewed our efforts to coordinate source water protection with DES's underground and above-ground storage tank programs. We are developing new outreach materials dealing with gas stations in wellhead protection areas (WHPAs) and we will notify water suppliers when new USTs are being located in WHPAs, and the AST program will prioritize inspections in WHPAs.

Your suggestions and comments on our program are welcome anytime. Please contact Paul Susca at (603) 271-7061 or psusca@des.state.nh.us or Brandon Kernen at (603) 271-0660 or bkernen@des.state.nh.us.

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